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10/578,101	08/10/2006	Yvon Gourhant	127905	4688

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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
BAIG, ADNAN	
ART UNIT	PAPER NUMBER
2461	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com
jarmstrong@oliff.com

Office Action Summary	Application No.	Applicant(s)	
	10/578,101	GOURHANT ET AL.	
	Examiner	Art Unit	
	ADNAN BAIG	2461	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2011*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 6 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 6, the claim is directed towards a “computer-readable recording medium”. Since the specification does not exclude a non-transitory embodiment for the “computer-readable recording medium”, the examiner interprets the claimed “computer-readable recording medium” to cover a transitory signal which is non-statutory. In order for the apparatus to be considered statutory, the claim must be directed towards a non-transitory device.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al. US (2004/0121792) in view of in view of Nyman et al. US (2004/0186883), and further in view of Kennedy USP (6,754,192).

Regarding Claim 1, Allen discloses a method of notifying, within one node (**see Fig. 2, Node 102**) of an ad-hoc network (**see Fig. 2 & Para [0005] & [0021]**), changes of state of the ad-hoc network to at least one of the applications (**see Fig. 3, Application 316**) of the application layer (**see Fig. 3, Application Layer 314**) adapted to execute on the ad-hoc network (**see Fig. 3 & Para [0026]**), the at least one application being sensitive to changes of state of the ad-hoc network (**see Fig. 4, Step 418**), the method comprising the following steps, performed on said one node of the ad-hoc network:

said at least one application (**see Fig. 3, Application 316**) with a change of state notification means provided on the one node, (**see Fig. 4, Step 418 & Para [0025-0026] & [0033-0035]**)

extracting, at the one node routing information from a transport or network layer (**see Fig. 3, Network Layer 312**) of the ad-hoc network (**see Fig. 2**), with said change-of-state notification means, (**Referring to Fig. 3, when the device 102 receives a command to operate according to another routing protocol, routing information**

will be extracted from (308, 310, 312) via Network Layer 312, see Fig. 4 Step 418 & Para [0025] - [0026] lines 5-9 & Para [0033] e.g., switching to another protocol)

While Allen discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, Allen does not expressly disclose notifying within the one node, which node comprises, applications of the application layer, and registering said at least one application, wherein registering comprises indicating to the change of state notification means, during said registering, a type of routing information that is of interest for the at least one application being registered, extracting the indicated type of information from routing information exchanged by routing applications of nodes on the network layer with said change of state notification means with which the application has previously been registered, and forwarding said routing information extracted by the notification means to the application in the one node, so that the application can exploit said routing information However the limitations would be obvious in view of the teachings of Nyman et al. US (2004/0186883).

Nyman discloses notifying within the one node (**see Fig. 4B, Terminal 2**) which node (**see Fig. 4B, Terminal 1**) comprises, applications (**see Fig. 4B, Applications 41T**) of the application layer, (**see Fig. 6 & Para [0055-0057] e.g., xml based message**

formats making it possible for an application hosted by a message sending entity to invoke an application hosted by the receiving entity).

and registering said at least one application, (**see Para [0047] e.g., new applications can be registered with the application layer protocol handler & Para [0058] e.g., The arriving application messages are dispatched to the correct application via a mechanism that makes it simple to create and register new applications**).

wherein registering comprises indicating to the Protocol stack, during said registering, a type of routing information that is of interest for the at least one application being registered, (**see Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest) "based on the header" & Para [0057] "The stack includes an application layer protocol handler, and applications are registered with the application layer protocol handler so as to be able to receive messages from a message-sending entity based on a specific application identifier included in the message**).

Extracting (**see Fig. 6, Step 66**), at the terminal the indicated type of information from routing information exchanged by routing applications of nodes (**see Para [0050] lines 16-19**) on the network layer with the protocol stack with which the application has previously been registered (**see Fig. 6 & Para [0055] e.g., "the target side application**

layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest) "based on the header, extracts the xml based message, invokes the target application, and passes the xml based message to the target application).

forwarding said routing information extracted by the protocol stack to the application in the one node, so that the application can exploit said routing information, (**see Fig. 6 Step 66 & Para [0055] & Para [0058] e.g., The arriving application messages are dispatched (e.g., forwarded) to the correct application via a mechanism that makes it simple to create and register new applications**)

Nyman further teaches the prior art does not disclose how to use a SIP session invitation from a server to invoke a certain web service application on a terminal, (**see Para [0006] lines 12-14**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the application within the application layer of Allan who discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, to be registered with applications of other nodes as disclosed Nyman who teaches indicating a type of routing information of interest for at least one application being

registered between the host of an invoking application and the host of the target application for initiating a target application, because the teaching lies in Nyman for overcoming the prior art to invoke certain web service applications on a terminal.

While Allen in view of Nyman discloses notifying, within one node of an ad-hoc network, changes of state to at least one application of an application layer, Allen in view of Nyman does not expressly disclose the changes of state of the resources of the ad-hoc network. However the limitation would be rendered obvious in view of the teachings of Kennedy USP (6,754,192).

Kennedy discloses a method of notifying a node the changes of state in the resources of an ad-hoc (**see Fig. 1**) network, (**see Col. 2 lines 58-67 & Col. 3 lines 1-35 e.g., each mobile node comprises a controller which includes route tables defining routes in the network, wherein a route is defined by a set of links and nodes (resources of ad-hoc network) from a source to a destination. The controller also includes a route discovery module to discover routes and update the route tables with one of a plurality of route discovery processes, proactive and reactive route discovery processes**)

Kennedy teaches new applications are important in mobile ad hoc networks and a serious challenge is faced when nodes in a network must self organize due to a lack of a fixed infrastructure and information becomes obsolete due to changes in the network

topology occurs, **see Col. 1 lines 35-65.** Kennedy suggests a routing protocol needs to adapt to frequent topology changes, **see Col. 1 lines 65-66**)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the change of state notification means which notifies an application at the application layer within a node of an ad-hoc network as taught by Allen in view of Nyman, to be based on a change of state of the resources of the ad-hoc network by implementing the teachings of Kennedy who discloses updating routes in a routing table within a node which is based upon a set of links and nodes from a source to a destination in an ad-hoc network, because the teaching lies in Kennedy to adapt to frequent topology changes in a mobile ad hoc network.

Regarding Claim 2, the combination of Allen in view of Nyman, and further in view of Kennedy, disclose a change-of-state notification method according to claim 1, wherein, during the registering by which the at least application was registered with the change-of-state notification means (**Nyman, see Para [0057]**), a fraction of at least one of the nodes and of links of the network is selected so that the information that is extracted and forwarded to said at least one application is routing information relating to said selected fraction of at least one the nodes and of the links, (**See Kennedy Col. 3 Lines 5-10 & Col. 5 Lines 35-47**).

Regarding Claim 3, the combination of Allen in view of Nyman, and further in view of Kennedy, disclose a change-of-state notification method according to claim 1, wherein the routing information is extracted by interrogating a routing protocol implemented in the ad-hoc network, (**Kennedy further teaches an ad-hoc network see Col. 2 Lines 35-40. Kennedy further teaches a reactive routing protocol which interrogates routing information from updated route tables when necessary, see Col. 5 Lines 1-10**).

Regarding Claim 4, the combination of Allen in view of Nyman, and further in view of Kennedy, disclose a change-of-state notification method according to claim 3, wherein the routing information is extracted from routing tables exchanged by a proactive routing protocol of the ad-hoc network, (**Kennedy further teaches a proactive OLSR routing protocol is implemented by providing route information from routing tables, see Col. 6 Lines 60-67**).

Regarding Claim 5, the combination of Allen in view of Nyman, and further in view of Kennedy disclose a change-of-state notification method according to claim 1, further including a step of dynamically extending the notification means during which new extraction rules are introduced into the notification means corresponding to new routing information that has been deployed on the ad-hoc network, (**Kennedy further teaches new routing information in the network where a proactive protocol is switched to**

a reactive protocol, and a new route information is determined, Col. 9 see Lines 38-45).

Regarding Claim 6, Allen discloses a computer-readable recording medium storing a computer program for performing, within one node (**see Fig. 2, Node 102**) of an ad-hoc network (**see Fig. 2 & Para [0005] & [0021]**), a change of state notification method, the method executed by a computer, wherein the program includes, for an application (**see Fig. 3, Application 316**) of the one node, the application being sensitive to changes of state of the ad-hoc network (**see Fig. 4, Step 418**), instructions causing the computer to operate the one node of the ad-hoc network as follows (**see Para [0041-0042]**):

Operate as means for the application of the one node (**see Fig. 3, Application 316**) with a change of state notification means provided on the one node, (**see Fig. 4, Step 418 Para [0025-0026] & [0033-0035]**)

Operate as means for extracting routing information from a transport or network layer (**see Fig. 3, Network Layer 312**) of the ad-hoc network (**see Fig. 2**), with said change-of-state notification means, (**Referring to Fig. 3, when the device 102 receives a command to operate according to another routing protocol, routing information will be extracted from (308, 310, 312) via Network Layer 312, see Fig. 4 Step 418 & Para [0025] - [0026] lines 5-9 & Para [0033] e.g., switching to another protocol)**

While Allen discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, Allen does not expressly disclose notifying within the one node, which node comprises, applications of the application layer, and registering said at least one application, wherein registering comprises indicating to the change of state notification means, during said registering, a type of routing information that is of interest for the at least one application being registered, extracting the indicated type of information from routing information exchanged by routing applications of nodes on the network layer with said change of state notification means with which the application has previously been registered, and forwarding said routing information extracted by the notification means to the application in the one node, so that the application can exploit said routing information However the limitations would be obvious in view of the teachings of Nyman et al. US (2004/0186883).

Nyman discloses notifying within the one node (**see Fig. 4B, Terminal 2**) which node (**see Fig. 4B, Terminal 1**) comprises, applications (**see Fig. 4B, Applications 41T**) of the application layer, (**see Fig. 6 & Para [0055-0057] e.g., xml based message formats making it possible for an application hosted by a message sending entity to invoke an application hosted by the receiving entity**).

and registering said at least one application, (**see Para [0047] e.g., new applications can be registered with the application layer protocol handler & Para [0058] e.g., The arriving application messages are dispatched to the correct application via a mechanism that makes it simple to create and register new applications**).

wherein registering comprises indicating to the Protocol stack, during said registering, a type of routing information that is of interest for the at least one application being registered, (**see Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest) "based on the header" & Para [0057] "The stack includes an application layer protocol handler, and applications are registered with the application layer protocol handler so as to be able to receive messages from a message-sending entity based on a specific application identifier included in the message**).

Extracting (**see Fig. 6, Step 66**), at the terminal the indicated type of information from routing information exchanged by routing applications of nodes (**see Para [0050] lines 16-19**) on the network layer with the protocol stack with which the application has previously been registered (**see Fig. 6 & Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest)**

"based on the header, extracts the xml based message, invokes the target application, and passes the xml based message to the target application).

forwarding said routing information extracted by the protocol stack to the application in the one node, so that the application can exploit said routing information, (**see Fig. 6 Step 66 & Para [0055] & Para [0058] e.g., The arriving application messages are dispatched (e.g., forwarded) to the correct application via a mechanism that makes it simple to create and register new applications**)

Nyman further teaches the prior art does not disclose how to use a SIP session invitation from a server to invoke a certain web service application on a terminal, (**see Para [0006] lines 12-14**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the application within the application layer of Allan who discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, to be registered with applications of other nodes as disclosed Nyman who teaches indicating a type of routing information of interest for at least one application being registered between the host of an invoking application and the host of the target

application for initiating a target application, because the teaching lies in Nyman for overcoming the prior art to invoke certain web service applications on a terminal.

In regards to **Para [0033]** of the applicant's specification (US (2007/0070912), the change of state notification means refer to the change of state in the resources of the ad-hoc network.

While Allen in view of Nyman discloses notifying, within one node of an ad-hoc network, changes of state to at least one application, Allen in view of Nyman does not expressly disclose the changes of state means including change of state in the resources of the ad-hoc network. However the limitation would be rendered obvious in view of the teachings of Kennedy USP (6,754,192).

Kennedy discloses a method of notifying a node the changes of state in the resources of an ad-hoc (**see Fig. 1**) network, (**see Col. 2 lines 58-67 & Col. 3 lines 1-35 e.g., each mobile node comprises a controller which includes route tables defining routes in the network, wherein a route is defined by a set of links and nodes (resources of ad-hoc network) from a source to a destination. The controller also includes a route discovery module to discover routes and update the route tables with one of a plurality of route discovery processes, proactive and reactive route discovery processes**)

Kennedy teaches new applications are important in mobile ad hoc networks and a serious challenge is faced when nodes in a network must self organize due to a lack of a fixed infrastructure and information becomes obsolete due to changes in the network topology occurs, **see Col. 1 lines 35-65.** Kennedy suggests a routing protocol needs to adapt to frequent topology changes, **see Col. 1 lines 65-66**)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the change of state notification means which notifies an application within a node of an ad-hoc network to switch to a different routing protocol as taught by Allen in view of Nyman, to be based on a change of state of the resources of the ad-hoc network by implementing the teachings of Kennedy who discloses updating routes in a routing table within a node which is based upon a set of links and nodes from a source to a destination in an ad-hoc network, because the teaching lies in Kennedy to adapt to frequent topology changes in a mobile ad hoc network.

Regarding Claim 7, Allen discloses a system for notifying, within one node (**see Fig. 2, Node 102**) of an ad-hoc network (**see Fig. 2 & Para [0005] & [0021]**), changes of state of the ad-hoc network, the system comprising the ad-hoc network, and at least one application of the application layer (**see Fig. 3, Application 316**) adapted to execute on the ad-hoc network (**see Fig. 3 & Para [0025]**), the at least one application being sensitive to changes of state of the ad-hoc network (**see Fig. 4, Step 418**), and including a computer program installed on one node of the ad-hoc network, the program

including, for an application of the one node, instructions for causing the one node to operate as follows, (**see Para [0041-0042]**)

Operate as means for the application of the one node (**see Fig. 3, Application 316**) with a change of state notification means provided on the one node, (**see Fig. 4, Step 418 & Para [0025-0026] & [0033-0035]**)

Operate as means for extracting routing information from a transport or network layer (**see Fig. 3, Network Layer 312**) of the ad-hoc network (**see Fig. 2**), with said change-of-state notification means, (**Referring to Fig. 3, when the device 102 receives a command to operate according to another routing protocol, routing information will be extracted from (308, 310, 312) via Network Layer 312, see Fig. 4 Step 418 & Para [0025] - [0026] lines 5-9 & Para [0033] e.g., switching to another protocol)**

While Allen discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, Allen does not expressly disclose notifying within the one node, which node comprises, applications of the application layer, and registering said at least one application, wherein registering comprises indicating to the change of state notification means, during said registering, a type of routing information that is of interest for the at least one application being registered, extracting the indicated type of

information from routing information exchanged by routing applications of nodes on the network layer with said change of state notification means with which the application has previously been registered, and forwarding said routing information extracted by the notification means to the application in the one node, so that the application can exploit said routing information However the limitations would be obvious in view of the teachings of Nyman et al. US (2004/0186883).

Nyman discloses notifying within the one node (**see Fig. 4B, Terminal 2**) which node (**see Fig. 4B, Terminal 1**) comprises, applications (**see Fig. 4B, Applications 41T**) of the application layer, (**see Fig. 6 & Para [0055-0057] e.g., xml based message formats making it possible for an application hosted by a message sending entity to invoke an application hosted by the receiving entity**).

and registering said at least one application, (**see Para [0047] e.g., new applications can be registered with the application layer protocol handler & Para [0058] e.g., The arriving application messages are dispatched to the correct application via a mechanism that makes it simple to create and register new applications**).

wherein registering comprises indicating to the Protocol stack, during said registering, a type of routing information that is of interest for the at least one application being registered, (**see Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the**

target application to be invoked" (e.g., application of interest) "based on the header" & Para [0057] "The stack includes an application layer protocol handler, and applications are registered with the application layer protocol handler so as to be able to receive messages from a message-sending entity based on a specific application identifier included in the message).

Extracting (**see Fig. 6, Step 66**), at the terminal the indicated type of information from routing information exchanged by routing applications of nodes (**see Para [0050] lines 16-19**) on the network layer with the protocol stack with which the application has previously been registered (**see Fig. 6 & Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest) "based on the header, extracts the xml based message, invokes the target application, and passes the xml based message to the target application**).

forwarding said routing information extracted by the protocol stack to the application in the one node, so that the application can exploit said routing information, (**see Fig. 6 Step 66 & Para [0055] & Para [0058] e.g., The arriving application messages are dispatched (e.g., forwarded) to the correct application via a mechanism that makes it simple to create and register new applications**)

Nyman further teaches the prior art does not disclose how to use a SIP session invitation from a server to invoke a certain web service application on a terminal, (**see Para [0006] lines 12-14**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the application within the application layer of Allan who discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, to be registered with applications of other nodes as disclosed Nyman who teaches indicating a type of routing information of interest for at least one application being registered between the host of an invoking application and the host of the target application for initiating a target application, because the teaching lies in Nyman for overcoming the prior art to invoke certain web service applications on a terminal.

In regards to **Para [0033]** of the applicant's specification (US (2007/0070912), the change of state notification means refer to the change of state in the resources of the ad-hoc network.

While Allen in view of Nyman discloses notifying, within one node of an ad-hoc network, changes of state to at least one application, Allen in view of Nyman does not expressly disclose the changes of state means including change of state in the resources of the

ad-hoc network. However the limitation would be rendered obvious in view of the teachings of Kennedy USP (6,754,192).

Kennedy discloses a method of notifying a node the changes of state in the resources of an ad-hoc (**see Fig. 1**) network, (**see Col. 2 lines 58-67 & Col. 3 lines 1-35 e.g., each mobile node comprises a controller which includes route tables defining routes in the network, wherein a route is defined by a set of links and nodes (resources of ad-hoc network) from a source to a destination. The controller also includes a route discovery module to discover routes and update the route tables with one of a plurality of route discovery processes, proactive and reactive route discovery processes**)

Kennedy teaches new applications are important in mobile ad hoc networks and a serious challenge is faced when nodes in a network must self organize due to a lack of a fixed infrastructure and information becomes obsolete due to changes in the network topology occurs, **see Col. 1 lines 35-65.** Kennedy suggests a routing protocol needs to adapt to frequent topology changes, **see Col. 1 lines 65-66**)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the change of state notification means which notifies an application within a node of an ad-hoc network to switch to a different routing protocol as taught by Allen in view of Nyman, to be based on a change of state of the resources of the ad-hoc

network by implementing the teachings of Kennedy who discloses updating routes in a routing table within a node which is based upon a set of links and nodes from a source to a destination in an ad-hoc network, because the teaching lies in Kennedy to adapt to frequent topology changes in a mobile ad hoc network.

Regarding Claim 8, Allen discloses a node (**see Fig. 2, Node 102**) of an ad-hoc network (**see Fig. 2 & Para [0005] & [0021]**), comprising routing applications (**see Fig. 3, Applications 316, 318, 320**), the node storing a computer program including, for an application of the node, the application being sensitive to changes of state of the ad-hoc network, instructions for causing the node to (**see Para [0041-0042]**):

Operate as means for the application of the one node (**see Fig. 3, Application 316**) with a change of state notification means provided on the one node, (**see Fig. 4, Step 418 Para [0025-0026] & [0033-0035]**)

Operate as means for extracting routing information from a transport or network layer (**see Fig. 3, Network Layer 312**) of the ad-hoc network (**see Fig. 2**), with said change-of-state notification means, (**Referring to Fig. 3, when the device 102 receives a command to operate according to another routing protocol, routing information will be extracted from (308, 310, 312) via Network Layer 312, see Fig. 4 Step 418 & Para [0025] - [0026] lines 5-9 & Para [0033] e.g., switching to another protocol)**

While Allen discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, Allen does not expressly disclose notifying within the one node, which node comprises, applications of the application layer, and registering said at least one application, wherein registering comprises indicating to the change of state notification means, during said registering, a type of routing information that is of interest for the at least one application being registered, extracting the indicated type of information from routing information exchanged by routing applications of nodes on the network layer with said change of state notification means with which the application has previously been registered, and forwarding said routing information extracted by the notification means to the application in the one node, so that the application can exploit said routing information However the limitations would be obvious in view of the teachings of Nyman et al. US (2004/0186883).

Nyman discloses notifying within the one node (**see Fig. 4B, Terminal 2**) which node (**see Fig. 4B, Terminal 1**) comprises, applications (**see Fig. 4B, Applications 41T**) of the application layer, (**see Fig. 6 & Para [0055-0057] e.g., xml based message formats making it possible for an application hosted by a message sending entity to invoke an application hosted by the receiving entity**).

and registering said at least one application, (**see Para [0047] e.g., new applications can be registered with the application layer protocol handler & Para [0058] e.g., The arriving application messages are dispatched to the correct application via a mechanism that makes it simple to create and register new applications**).

wherein registering comprises indicating to the Protocol stack, during said registering, a type of routing information that is of interest for the at least one application being registered, (**see Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest) "based on the header" & Para [0057] "The stack includes an application layer protocol handler, and applications are registered with the application layer protocol handler so as to be able to receive messages from a message-sending entity based on a specific application identifier included in the message**).

Extracting (**see Fig. 6, Step 66**), at the terminal the indicated type of information from routing information exchanged by routing applications of nodes (**see Para [0050] lines 16-19**) on the network layer with the protocol stack with which the application has previously been registered (**see Fig. 6 & Para [0055] e.g., "the target side application layer protocol handler, upon receiving the encapsulated xml based message, determines the target application to be invoked" (e.g., application of interest)**

"based on the header, extracts the xml based message, invokes the target application, and passes the xml based message to the target application).

forwarding said routing information extracted by the protocol stack to the application in the one node, so that the application can exploit said routing information, (**see Fig. 6 Step 66 & Para [0055] & Para [0058] e.g., The arriving application messages are dispatched (e.g., forwarded) to the correct application via a mechanism that makes it simple to create and register new applications**)

Nyman further teaches the prior art does not disclose how to use a SIP session invitation from a server to invoke a certain web service application on a terminal, (**see Para [0006] lines 12-14**).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the application within the application layer of Allan who discloses notifying within one node of an ad-hoc network, changes of state of routing information to at least one application of the application layer by a change of state notification means, where the routing information will be extracted by the network layer for use by the application, to be registered with applications of other nodes as disclosed Nyman who teaches indicating a type of routing information of interest for at least one application being registered between the host of an invoking application and the host of the target

application for initiating a target application, because the teaching lies in Nyman for overcoming the prior art to invoke certain web service applications on a terminal.

In regards to **Para [0033]** of the applicant's specification (US (2007/0070912), the change of state notification means refer to the change of state in the resources of the ad-hoc network.

While Allen in view of Nyman discloses notifying, within one node of an ad-hoc network, changes of state to at least one application, Allen in view of Nyman does not expressly disclose the changes of state means including change of state in the resources of the ad-hoc network. However the limitation would be rendered obvious in view of the teachings of Kennedy USP (6,754,192).

Kennedy discloses a method of notifying a node the changes of state in the resources of an ad-hoc (**see Fig. 1**) network, (**see Col. 2 lines 58-67 & Col. 3 lines 1-35 e.g., each mobile node comprises a controller which includes route tables defining routes in the network, wherein a route is defined by a set of links and nodes (resources of ad-hoc network) from a source to a destination. The controller also includes a route discovery module to discover routes and update the route tables with one of a plurality of route discovery processes, proactive and reactive route discovery processes**)

Kennedy teaches new applications are important in mobile ad hoc networks and a serious challenge is faced when nodes in a network must self organize due to a lack of a fixed infrastructure and information becomes obsolete due to changes in the network topology occurs, **see Col. 1 lines 35-65.** Kennedy suggests a routing protocol needs to adapt to frequent topology changes, **see Col. 1 lines 65-66**)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention for the change of state notification means which notifies an application within a node of an ad-hoc network to switch to a different routing protocol as taught by Allen in view of Nyman, to be based on a change of state of the resources of the ad-hoc network by implementing the teachings of Kennedy who discloses updating routes in a routing table within a node which is based upon a set of links and nodes from a source to a destination in an ad-hoc network, because the teaching lies in Kennedy to adapt to frequent topology changes in a mobile ad hoc network.

Regarding Claim 9, the combination of Allen in view of Nyman, and further in view of Kennedy disclose, a change of state notification method according to claim 4, wherein the proactive routing protocol is the OLSR protocol, (**Kennedy, see Col. 6 Lines 60-67**).

Regarding Claim 10, the combination of Allen in view of Nyman, and further in view of Kennedy disclose a change-of-state notification method according to claim 1, wherein

the type of information indicated during registration comprises information relating to the nodes of the network that might have an influence on implementing the application, (**Nyman, see Fig. 6 host of invoking application & Para [0055]**)

Regarding Claim 11, the combination of Allen in view of Nyman, and further in view of Kennedy disclose a change-of-state notification method according to claim 10, wherein the information relating to the nodes indicates which nodes of the ad-hoc network are available or not, (**Nyman, see Fig. 6 host of invoking application & Para [0055]**)

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADNAN BAIG whose telephone number is (571)270-7511. The examiner can normally be reached on Mon-Fri 7:30m-5:00pm eastern Every other Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ADNAN BAIG/
Examiner, Art Unit 2461

/Huy D Vu/

Supervisory Patent Examiner, Art Unit 2461